CHAPTER X. Maternal, Infant and Child Health

Introduction. In 1990, the number of children ages birth to 19 years in Hawaii was 294,098. In 1996, this count increased by 16% to an estimate of 340,146. Children represent roughly 29% of Hawaii's population and are a segment that deserves recognition as they are the future of Hawaii's families and communities.

Access to quality maternal and child health services has serious implications on the outcomes of a healthy pregnancy and childhood. Because of this, Hawaii's health care system must consciously make an effort to provide our expectant mothers, infants and children with the quality health services they need for education, prevention, and treatment.

The objective of maternal, infant and child health care is not only on improving the level and scope of health care for Hawaii's mothers and children but also on increasing community awareness about those issues that directly affect their health and the positive outcomes of education and prevention. This chapter will examine four areas under the category of maternal and child health: maternal health, infant health, pediatric health, and adolescent health, and mechanisms by which to monitor and improve maternal, infant and child health care in Hawaii.

· *Part 1. Maternal Health*

A. Overview

Maternal health refers to the health status of women during pregnancy. Efforts to improve maternal health have the double benefit of improving the outcome of the woman and ensuring the best possible start in life for the infant(s). Healthy babies start with healthy mothers, and we know that maternal health can be improved with intervention.

Through a number of sources and references including publications and professional medical input, the following factors have been identified as being primary indicators of the status of maternal health in the State of Hawaii.

1. Pregnancy/Birth Related Conditions and Mode of Delivery. Pregnancy and birth related conditions such as hypertensive disorders, post-partum hemorrhage, and infections are the most common causes of maternal death. Hypertensive disorders occur in up to 5% of all pregnancies and are responsible for approximately 18% of all maternal deaths in the United States.[1]

Infection occurring during or immediately after pregnancy may also be dangerous for the mother and/or the baby. Common infections during pregnancy include varicella, coxsackie, parvovirus, chlamydia, herpes simplex, hepatitis B. Less common but often more dangerous infections

include HIV, rubella, listeria. Group B strep and coliform infections are both common and dangerous, particularly for the infant.[2]

The mode of delivery also has an impact on the maternal mortality rate, with cesarean section (c-section) being more dangerous for the mother. Efforts have been underway to decrease the rate of C-section deliveries which have resulted in a slow decline since 1991.

Measures of pregnancy/birth related conditions and modes of delivery include:

- Pregnancies affected by hypertensive disorders
- Pregnancies affected by infections
- Pregnancies affected by other complications (other than hypertensive disorders and infections)
- C-Section deliveries
- Average Length of Stay (ALOS) for vaginal deliveries
- ALOS for c-section deliveries
- Vaginal Births After Previous C-Section (VBAC) deliveries

2. Prenatal Care. Early and regular prenatal care has been clearly shown to improve the outcome of pregnancy for both mother and baby. It is recommended that prenatal care be initiated as soon as a woman suspects that she may be pregnant. Regular prenatal visits allow medical personnel to evaluate and correct many problems early and prevent more serious consequences. For example: many women develop gestational diabetes when pregnant. If this condition is not identified and treated, babies born to mothers with diabetes during pregnancy tend to be inappropriately large and at greater risk of injury during the birth process. With appropriate care, these women have babies of normal size and average risk.

There is one important measure for prenatal care, which has been labeled as:

- Early prenatal care

3. Teen Pregnancies. Teen pregnancy rates impact maternal health data in several ways. Teens are at risk for poor pregnancy outcome due to poor nutrition and a higher risk of hypertensive disorders. They are also at higher risk for substance abuse and other high risk behaviors. Additionally, teens are less likely to initiate early and regular prenatal care. All these factors and others, lead to a significantly increased risk that teen mothers will deliver low birth weight and/or premature babies.

In 1988, it was estimated by the US Department of Health and Human Services that one million U.S. adolescent females would conceive annually. This is consistent with the information that 78% of females become sexually active by the age of 20 in the U.S.[3] It may also be reflective of the difficulty many teens have in accessing contraceptive and family planning services.

The outcome of teen pregnancies: 40% aborted electively, 13% miscarried, 47% live births. In 1995, Hawaii's teen birth rate was 48.1 per 1,000 women aged 15-19.[4] Hawaii was ranked 31st in the nation with the national average being 56.8 pregnancies per 1,000 15-19 year old women.[5]

Measures of teen pregnancies include:

- Mothers with recorded substance abuse during pregnancy
- Teen births

- Preterm labor

B. Measures/Indicators

1. Process Measures

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
MHP-1	Mothers with Recorded Substance Abuse During Pregnancy	Substance abuse by mothers during prenatal period (as documented in medical record upon delivery)	Estimated 10%	***	*Neonatology, 4th Edition*, 1994; Hawai`i Birth Defects Monitoring Program	*Behavioral Health*
MHP-2	Cesarean Section	Deliveries by C-section	15%	18%	Hawai`i Health Department, Office of Status Monitoring; HHIC	
MHP-3	ALOS for Vaginal Delivery	Length of stay in hospital for vaginal deliveries	2.0 days	2.2 days	Hawai`i Department of Health	
MHP-4	ALOS for Cesarean Delivery	Length of stay in hospital for C-section delivery	4.0 days	4.3 days	Hawai`i Department of Health	
MHP-5	VBAC	Vaginal birth deliveries after previous C-section delivery	50%	***	JCAHO	

***Data exists but not assimilated for the State

2. Outcome Measures

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
MHO-1	Early Prenatal Care	Mothers who received prenatal care in the first trimester of pregnancy	90%	84.2%	*Healthy People 2000;* Hawai`i Department of Health	
MH0-2	Teen Births	Births to teenaged mothers age 15-19 years	56.8 per 1000	48.1 per 1000	U.S. Department of Health and Human Services; National Vital Statistics System	
MHO-3	Hypertensive Disorders	Pregnancies affected by hypertensive disorders	0.5% to 5.0%	***	*William's Obstetrics 20th Edition*, 1997;	*Heart Disease and Stroke*
MH0-4	Infections	Pregnancies affected by infections	To Be Updated By SHCC/PDC	5.1 per 100 deliveries	To Be Determined; Hawai`i Birth Defects Monitoring Program	*Infectious Diseases*
MHO-5	Other Complications	Pregnancies affected by complications other than hypertensive	22.0 per 100 deliveries	***	*Healthy People 2000*	*Cancer; Diabetes and Other Chronic Disabling Conditions;*

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
		disorders and infections				*Preventable Injuries and Violence; Behavioral Health*
MHO-6	Preterm labor	Premature labor and/or deliveries	6.0% to 8.0%	***	*William's Obstetrics 20th edition*, 1997	

***Data exists but not assimilated for the State
SHCC/PDC: Statewide Health Coordinating Council's Plan Development Committee

C. Community-Specific Issues

Community factors contribute towards the awareness, acceptance, utilization and effectiveness of health-related services. As such, it is important to recognize the issues that impact the level of maternal health care in the State.

1. Community awareness. Community awareness of the significant positive impact of preventive care during pregnancy may not yet be optimal. Until the preventive care impact is recognized it may continue to be difficult to make an impact on the number of women (and especially teens) who initiate prenatal care easily.

2. Community support for teen education. A key preventive factor is community support for pre-teen and teen education regarding sexual activity, contraception, pregnancy and high- risk behaviors.

3. Concern about the ability to pay for care. There is much concern about Hawaii's low-income women and their ability to pay for the care they need. It is estimated that about 4% of Hawaii's population is not insured. [6] The inability to pay for medical care could drive up the number of pregnant women who refrain from seeking early and continuous prenatal care.

D. Priorities

In order to improve the level of maternal health in Hawaii, it is important that Hawaii's women be aware of the services available to them. In addition to awareness, Hawaii's women must be able to get access to the quality services they need and want at reasonable costs. Attention should be given to the following priority areas when considering the State's need for maternal health:

1. Access.

- Ensure access to prenatal care for all women in Hawaii
- Maintenance of regional perinatal services to assure access to quality services in Hawai`i
- Provide access to family planning services especially for teens
- Ensure access to behavioral health services, which address such high-risk behaviors as substance abuse. (Cross Reference to Chapter X: *Behavioral Health: Mental Health, Alcohol, Other Drugs, and Tobacco*)

2. Quality.

- Support a health care delivery system which fosters knowledgeable and skilled medical personnel and advanced technical equipment and facilities.

3. Cost.

- Provide community-based education as a cost-effective means of preventing teenage pregnancies and stressing the importance of early and continuous prenatal care.
- Emphasize preventive care rather than treatment-based care.

· Part 2. Infant Health

A. Overview

The health of infants at birth and in the early months of life is critically important to their future success as productive citizens. While many factors are important in promoting optimal infant health, there are a few key indicators which are accepted and widely used. Recent study in the area of early brain development underscores the importance of the first three years of life to the subsequent success of an individual. Unlike any other period in the human life span (except the prenatal period), lack of basic health services may result in consequences which last a lifetime.

Through a number of sources and references including publications and professional medical input, the following factors have been identified as being primary indicators of the status of infant health in the State of Hawaii.

1. Infant Morbidity and Mortality. The neonatal death rate is used as an important indicator of both the health of women during pregnancy and the medical support systems in place for delivery and immediate newborn care. In Hawaii, the infant death rate in 1995 was 5.7 deaths per 1,000 live births as compared to the national rate of 7.6 deaths per 1,000 live births.[7] Although it may not seem obvious on the surface, in a health system which is providing excellent care for newborns with a low absolute infant mortality rate, a majority of the deaths which do occur should be in the first month of life. Therefore, it is not alarming to note that from 1990-1994 in Hawaii, 65% of infant deaths occurred within the first month of life.[8]

The birth weight of an infant is a very important indicator of expected infant health (or conversely the risk of serious problems). Babies born with a weight of 5 ½ pounds (2500 grams) or less are designated as being low birth weight (LBW) and have an increased risk of illnesses, lengthy and/or multiple hospital stays and a higher risk of death. Low birth weight babies have been shown to be 40 times more likely to die than normal weight babies and three times more likely to suffer from chronic illnesses.[9]

Morbidity and mortality measures include:

- Five-Minute APGAR Score (of less than 7)
- All Neonatal Deaths
- Neonatal Deaths of Low Birth Weight Babies

2. Infant Immunization. Infant immunization is one of the most cost effective prevention programs available. Immunization prevents serious illnesses which otherwise may lead to significant illness and sometimes death. Unfortunately, Hawaii's infant immunization rate for 1995 (58.0%) reflects a decline from the 1987 rate of 67.9%.[10]

Measures for infant immunization include:

- Fully immunized two-year olds

B. Measures/Indicators

1. Process Measures

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
IHP-1	Fully Immunized Two-Year Olds	Immunization of children under two years of age for such illnesses as mumps, polio, measles, rubella, hepatitis B, diphtheria, pertussis, and tetanus	90%	63%	Hawai'i State Department of Health; *Hawai'i Kids Count 1997*	*Infectious Diseases*

2. Outcome Measures

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
IHO-1	Five-Minute APGAR Score of Less Than 7	Scoring system used to quickly assess the infant's need for resuscitation at 1 and 5 minutes after delivery	To Be Updated by SHCC's PDC.	1.1 %	JCAHO; Hawai`i Department of Health	
IHO-2	Neonatal Deaths	Deaths of neonates under 28 days	7.6 Deaths per 1000 Live Deaths	5.7 Deaths per Live Births	Health Trends in Hawaii, 1997	
IHO-3	Deaths of Low Birth Weight Babies	Deaths of infants weighing less than 2500g (under 28 days old)	88.5 per 1000	79.0 per 1000	US. Office of Disease Prevention and Health Promotion; Hawai`i State Department of Health	

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C. Community-Specific Issues

Data on infant health measures by specific communities within our state are not widely available. However, it is suspected that there may be variability caused by a number of factors. For example:

1. Ethnic variation in the incidence of low birth weight babies. Data from the State Department of Health reveals that the incidence of low birth weight babies varies by ethnicity (Filipinos 87.9/1,000 live births, Vietnamese 98.9/1,000, Japanese 77.1/1,000).[11] It would be expected, then, that communities with larger populations of these ethnic groups would have a higher incidence of LBW babies. Also, Hawaii as a whole would be expected to have a higher LBW rate than many other states with different ethnic makeup.

2. Awareness of the importance of preventive care. Awareness of the importance of preventive care and optimal ways to support infant development may not be widespread. It will be very important to disseminate this knowledge widely to have the greatest impact on infant health in all of our communities.

D. Priorities

In consideration of Hawaii's infant health needs, attention should be given to the following priority areas.

1. Access.

- Provide access to a source of basic immunizations for preventable childhood diseases. (Cross Reference to Chapter III: *Infectious Diseases*)
- Provide access to quality health facilities for infants that do require hospitalization and treatment.

2. Quality.

- Support a health care delivery system that fosters knowledgeable and skilled medical personnel dedicated to the care of infants and children and advanced technical equipment and facilities.

3. Cost.

- Provide community-based education to stress the importance of full immunization of infants before the age of 2 years.
- Emphasize preventive care rather than treatment-based care.
- Emphasize early childhood development to maximize the potential of our youngest citizens.

· Part 3. Pediatric Health

A. Overview

Pediatric health focuses on the healthcare of children between the ages of 0 and 18. This broad age bracket overlaps with both the infant and adolescent age categories. The well-being of children in the pediatric age group is important to monitor and support because children have unique needs for optimal physical, developmental and psychological growth.

Through a number of sources and references which include publications and professional medical input, the following factors have been identified as primary monitors for pediatric health in the State of Hawaii:

1. Child Immunization. The immunization rate of children has been as an important monitor for pediatric health and a measure of preventive health care. Adequate immunization protects children against a number of serious diseases including diseases that have killed or disabled children in the past. The completion of basic immunizations by age two is critical to achieve optimal protection. Children in Hawai`i are required to receive a basic immunization sequence prior to school entry at the kindergarten level (and beyond). Those immunizations which are required are: diphtheria, pertussis, tetanus, polio, measles, mumps, rubella and hepatitis B.[12] This requirement has been successful but, while the immunization rate in 1995 for Hawai`i's school aged children was close to 100%, only about 58% of children under age two had the basic immunization series.[13]

Measures for child immunization include:

- Fully immunized two-year olds (measure reflected in previous section on infant health)
- Child immunization

2. Child Mortality. As another monitor of pediatric health, the child death rate serves as an indication of such health issues as physiological health problems, exposure to hazardous conditions and preventable injuries, and child abuse and neglect. In 1995, 26% of all child deaths were attributed to injuries as opposed to illnesses. [14] At the national level, nearly 19,000 children ages 0-18 die as a result of some sort of injury. That equates to roughly 52 child deaths per day. In Hawaii, the annual injury death rate of children is 17.5 per 100,000 (an average of one child death per week). In Hawaii, the leading cause of death by injury for our children is motor vehicle related. The death rate from motor vehicle incidents is 7.9 deaths per 100,000 children or roughly 67% of all childhood deaths.[15]

Measures for child mortality include:

- All childhood deaths
- Deaths resulting from motor vehicle accidents
- Deaths resulting from child abuse and neglect

3. Illnesses. Illness incidence rates comprise yet another key monitor of pediatric health. According to a study by the University of Hawaii School of Medicine Department of Pediatrics in conjunction with the Beijing Medical University Department of Immunology, Hawai`i's tropical climate and seasonal changes account for the relatively high number of hospital admissions for asthma.[16] Besides asthma, rheumatic fever is another illness that continues to be a significant cause of morbidity in Hawai`i's children. From 1976 to 1988, the

annual incidence rate of Acute Rheumatic Fever (ARF) was 12.4 per 100,000 children, which is much higher than found on the mainland.[17]

Measures for child illnesses include:

- Admissions for asthma
- Admissions for gastroenteritis
- Admissions for rheumatic fever

4. Accidental and Non-Accidental Injuries. All injuries occurring in children should be viewed as preventable. Whether the cause is lack of supervision, failure to use appropriate safety equipment such as car seats or failure to interrupt the cycle of child abuse, there are known ways to intervene and decrease risk. Monitors which measure our success in protecting our children from harm include reasons for emergency room visits, poisoning data and child abuse and neglect data.

Measures for accidental and non-accidental injuries include:

- Water-related injuries
- Burns
- Trauma injuries
- Injuries for child abuse and neglect
- Non-fatal poisonings

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B. Measures/Indicators

1. Process Measures

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
PHP-1	Child Immunization	Children immunized in public schools kindergarten through post-secondary school	95%	98.8%	*Healthy People 2000*; State of Hawai`i Department of Health	*Infectious Diseases*

2. Outcome Measures

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
PHO-1	Admissions for Asthma	Hospitalization for children 14 years of age and under for asthma	225 per 100,000	***	*Healthy People 2000*;	*Diabetes and Other Chronic Disabling Conditions*
PHO-2	Admissions for Gastroenteritis	Pediatric gastroenteritis hospital/ER admissions	To Be Updated By SHCC's PDC	***	John Hopkins University;	

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
PHO-3	Water Related Injuries	Number of pediatric patients seen in an ER for water related injuries	To Be Updated By SHCC's PDC	133 pediatric patients per year	Yamamoto, et al	*Preventable Injuries and Violence*
PHO-4	Burns	Number of pediatric patients seen in an ER for burns	To Be Updated By SHCC's PDC	143 pediatric patients per year	Yamamoto, et al	*Preventable Injuries and Violence*
PHO-5	Trauma	Number of pediatric patients seen in an ER for trauma (excludes burns and water-related injuries	To Be Updated By SHCC's PDC	4513 pediatric patients per year	Yamamoto, et al	*Preventable Injuries and Violence; Dental (Oral) Health*
PHO-6	Rheumatic Fever Incidence	Number of pediatric patients who contracted Rheumatic fever	To Be Updated By SHCC's PDC	12.4 per 100,000	To Be Updated By SHCC's PDC;Chun, et al	
PHO-7	Non-Fatal Poisoning Incidence	Number of pediatric patients seen in an ER for non-fatal poisonings	88 per 100,000	***	*Healthy People 2000*	*Preventable Injuries and Violence*
PHO-8	Admissions for Child Abuse and Neglect	Number of hospitalized cases due to child abuse and neglect	To Be Updated By SHCC's PDC	An average of 61 annual hospitalized cases between 1991 and 1996	Child Protection Center, 10/98	*Preventable Injuries and Violence; Behavioral Health*
PHO-9	Childhood		21.4 per 100,000	28.0 per 100,000	*Healthy People*	

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
	Deaths				*2000*; *Hawai`i Kids Count – 1997*; Hawai`i Department of Health	
PHO-10	Deaths Resulting From Motor Vehicle Accidents	Motor vehicle death incidence of children 14 and under	7.9 Deaths per 100,000	4.1 per 100,000	*Hawai`i Kids Count-1997*; Hawai`i Department of Health	*Preventable Injuries and Violence*
PHO-11	Deaths Resulting from Child Abuse and Neglect		To Be Updated By SHCC's PDC	6 deaths in past 12 months	*The Honolulu Advertiser, 10/5/98*	*Preventable Injuries and Violence; Behavioral Health*

***Data exists but not assimilated for the State

C. Community-Specific Issues

Community factors surrounding pediatric health focus on physical environment, education and community awareness.

1. Hawaii's physical environment. Illnesses such as asthma are believed to be significantly impacted by Hawaii's tropical climate and season changes. According to a study conducted by the University of Hawaii School of Medicine and the Beijing Medical University, Hawaii's tropical climate and seasons indeed contribute to the high number of hospital admissions for asthma.[18] In relation to this, many Big Island physicians believe that the emissions of Kilauea Volcano's eruptions further contribute to the high illness and death rates for asthma patients on the Island of Hawaii. [19]

2. Community education. The benefit associated with preventive care versus treatment care is a relatively new concept that still needs to be emphasized to the community. The benefits of lower costs and better medical outcomes are just two examples of why the focus of health should be in the area of prevention.

3. Community awareness. Increased awareness of the hazards that surround us and put our children at risk would help to begin to decrease the incidence of injury and poisoning.

D. Priorities

In order to improve the level pediatric health in Hawaii, attention should be given to the following priority areas.

1. Access.

- Provide access to a means of childhood immunizations for preventable childhood diseases. (Cross Reference to Chapter III: *Infectious Diseases*)
- Provide access to family support services which offer support in such areas as child abuse, counseling, and education. (Cross Reference to Chapter VII: *Preventable Injuries and Violence*)
- Ensure access to behavioral health services which address such high risk behaviors as substance abuse, suicidal tendencies and crime. (Cross Reference to Chapter X: *Behavioral Health: Mental Health, Alcohol, Other Drugs, and Tobacco*)
- Ensure access to quality pediatric emergency and pediatric medical facilities that recognize and manage the unique aspects of pediatric care.

2. Quality.

- Support a health care delivery system which fosters knowledgeable and skilled pediatric medical personnel and advanced technical equipment and facilities.
- Support research to provide the latest advances in medicine and technology.

- Support programs with counselors and educators who are trained in pediatric issues.
- Support the education of our children on the importance and benefits of nutrition and exercise for their overall health (cross reference to Chapter V1: Heart Disease and Stroke).

3. Cost

- Provide community-based education as a cost-effective means of emphasizing the importance of immunization and awareness of preventable childhood and injuries.
- Emphasize preventive care rather than treatment-based care.

· *Part 4. Adolescent Health*

A. Overview

Adolescent health focuses on the health care of children during the adolescent years. Age definitions for the various measures vary but children between 11 and 19 years may be considered to be part of this group. Some of the health needs of this group are unique and different from both the pediatric and the adult populations and do need to be examined independently.

Through a number of sources and references including publications and professional medical input, the following factors have been identified as being primary indicators of the status of adolescent health in the State of Hawaii.

1. Primary Care. It is important to monitor primary care services delivered to adolescents. It is known nationally and confirmed locally in findings published by the Journal of American Health Policy and the Hawaii Department of Health, Family Health Services Division that adolescents do not seek or receive primary care services on a regular basis.[20] Care tends to be infrequent, episodic and often crisis oriented. It is difficult under those conditions to provide the necessary evaluation and counseling about known or anticipated risk behaviors. Many approaches have been promoted to try to improve utilization of adolescent primary care services. These range from improving insurance coverage of these visits, to establishing school based clinics which will provide a variety of services, to requirements for immunization during the adolescent years that will ensure interaction with the health care system.

Primary care measures include:

- School-based health service centers and comprehensive school health programs.

2. Teen Pregnancy. Teen pregnancy serves as an important monitor of adolescent health because it provides indirect information about teen sexual activity, risk for sexually transmitted diseases and ability to access services for contraception and/or abortion. It also provides important information useful to those interested in infant health as babies born to teen

mothers are at greatly increased risk for poor outcomes. Nationwide and locally, there has been a reduced rate of increase in teen pregnancies compared to the early 1990's.

Measures for teen pregnancy include:

- Teen pregnancies

3. Adolescent Mortality/High Risk Behaviors. One of the hallmarks of adolescence is the increase in risk taking behavior which occurs. Adolescent mortality statistics are a useful way to determine where programs should focus to limit this risk- taking behavior. Many deaths are preventable. Current statistics reveal that motor vehicle accidents (29%), suicide (25%) and homicide (4%) are the leading causes of death. [21] Further evaluation of the "other" causes may also yield information that could be useful in planning programs.

Fortunately, not all risk behaviors result in death. There is value in evaluating risk behaviors (where data can be obtained) at a community level as there may be variability in which behaviors are most problematic specific to locale. Suicide attempts, substance use and sexual activity are useful to evaluate. Between 1993 and 1996, the use of alcohol, marijuana and other drugs by adolescents in Hawaii increased 5-10%.[22] In 1993, over 25% of adolescents over the age of 15 years reported they had initiated sexual activity. [23]

Measures of adolescent mortality and high risk behavior include:

- Counseling for teen suicide
- DSM-IV psychological disorders
- Tobacco use
- Alcohol use
- Marijuana use
- Illicit drug use
- Youth deaths from motor vehicle accidents
- Youth homicide
- Youth suicide
- Sexually transmitted diseases

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B. Measures/Indicators

1. Process Measures

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
AHP-1	School-Based Health Service Centers/ Comprehensive School Health Programs	Public intermediate and high school students who are attending schools which offer School-Based Health Service Centers/ Comprehensive School Health Programs	40.0%	13.0%	Hawai`i Department of Health	
AHP-2	Psychological Counseling for Teen Suicide	Teen suicide inpatients who are seen by a psychologist/psychiatrist during their inpatient stay	To Be Updated By SHCC's PDC	To Be Updated By SHCC's PDC	Bidwell	*Preventable Injuries and Violence; Behavioral Health*

2. Outcome Measures

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
AHO-1	Teen Pregnancy	≤ 20 years of age	50.0 per 1000 pregnancies	127.1 per 1000 pregnancies	*Healthy People 2000*; Hawai`i Department of Health	
AHO-2	DSM-IV Psychological Disorders	DSM-IV psychological disorders in the Adolescent Population	17%	To Be Updated By SHCC's PDC	*Healthy People 2000 Review 1992*; McAnarney, et al, 1992	*Behavioral Health*
AHO-3	Tobacco Use	Adolescents who used tobacco products in past month (ages 11 to 21)	15%	19.8%	*Healthy People 2000*; Hawai`i Department of Health-Alcohol and Drug Abuse Division	*Cancer; Dental (Oral) Health; Behavioral Health*
AHO-4	Alcohol Use	Adolescents who used alcohol in past month	12.6% for ages 12 to 17 and 29.0% for ages 18 to 20	27%	*Healthy People 2000*; Department of Health-Alcohol and Drug Abuse Division	*Behavioral Health*
AHO-5	Marijuana Use	Adolescents who used marijuana in the previous month	3.2% for ages 12 to 17 and 7.8% for ages 18 to 20	11.9%	*Healthy People 2000*; Hawai`i Department of Health-Alcohol and Drug Abuse Division	*Behavioral Health*

Measure Number	Monitor	Definition	Guideline	Hawai`i experience	Guideline/ Hawai`i Experience Source	Cross Reference
AHO-6	Illicit Drug Use	Adolescents who used some type of illicit drug in previous month	8% of sixth graders, 18% of eighth graders, 23% of tenth graders and 26% of twelfth graders reported using at least one illicit drug.	15%	*Healthy People 2000*; Hawai`i Department of Health-Alcohol and Drug Abuse Division	*Behavioral Health*
AHO-7	Youth Deaths Resulting from Motor Vehicle Accidents	Youth motor vehicle crash deaths (ages 15 and older)	33.0 per 100,000	25.0 per 100,000	*Healthy People 2000 Review 1992*; *Health Trends in Hawai`i, 1997*	*Preventable Injuries and Violence*
AHO-8	Youth Homicide	Adolescent homicide deaths	7.2 per 100,000	1.6 per 100,000	*Healthy People 2000 Review 1992*; *Hawai`i Kids Count 1996 Data Book*	*Preventable Injuries and Violence*
AHO-9	Youth Suicides	Adolescent suicide deaths	8.2 per 100,000	9.7 per 100,000	*Healthy People 2000 Review 1992*; *Hawai`i Kids Count 1996 Data Book*	*Preventable Injuries and Violence; Behavioral Health*
AHO-10	Sexually Transmitted Diseases (STD)	Adolescents with newly diagnosed STD	750 per 100,000	991 per 100,000	*Healthy People 2000 Review 1992*; Hawai`i Department of Health	*Infectious Diseases; Dental (Oral) Health*

C. Community-Specific Issues

Community factors influencing adolescent health focus primarily on the need for education, awareness and counseling.

1. Community support. Community support for teen education regarding abstinence, sexual activity, sexually transmitted diseases, substance abuse, and other risk behaviors is a key factor.

2. Community awareness about the benefits of preventive care. The benefit associated with preventive care versus treatment care is a relatively new concept that still needs to be emphasized to the community. The benefits of lower costs and better medical outcomes are just two examples of why the focus of health should be in the area of prevention.

D. Priorities

In order to improve the health of adolescents in Hawaii, attention should be given to the following priority areas.

1. Access.

- Provide access to a means of primary care for all adolescents.
- Provide access to support services which offer support in such areas as counseling and education.
- Provide access to a source of prenatal care for pregnant teens.
- Ensure access to behavioral health services which address such high risk behaviors as substance abuse, suicidal tendencies and crime. (Cross References to Chapter X: *Behavioral Health: Mental Health, Alcohol, Other Drugs, and Tobacco* and Chapter VII: *Preventable Injuries and Violence*)
- Ensure access to quality medical facilities and clinics that can address adolescent health issues.

2. Quality.

- Support a health care delivery system that provides medical personnel knowledgeable in the medical and behavioral needs of the adolescent.
- Support research efforts that target adolescent behavior to obtain locally relevant information.
- Support programs with counselors and educators who have been trained to work with adolescents.

3. Cost.

- Emphasize preventive care rather than treatment-based care.

NOTES

[1] *William's Obstetrics 10th edition*, 1997; University of Hawai'i.
[2] U.S. Department of Health and Human Services, *Healthy People 2000*, 1990.
[3] U.S. Department of Health and Human Services, *Healthy People 2000*, 1990.
[4] U.S. Department of Health and Human Services, *Healthy People 2000*, 1990.
[5] National Vital Statistics System, Teenage Births in the United States: *National and State Trends, 1990-96*. U.S. Department of Health and Human Services.
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